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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,201	02/25/2002	Kazumi Yamada	TSM-20	2862
24956	7590	05/30/2006	EXAMINER	
MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C. 1800 DIAGONAL ROAD SUITE 370 ALEXANDRIA, VA 22314			THOMPSON, JAMES A	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/081,201	YAMADA, KAZUMI
	Examiner James A. Thompson	Art Unit 2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 March 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) _____ is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,2,5-9 and 14-16 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 25 February 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 5, lines 7-14, filed 13 March 2006, with respect to the rejections of claims 10-13 under 35 USC §112, 2nd paragraph have been fully considered and are persuasive. The rejections of claims 10-13 under 35 USC §112, 2nd paragraph listed in items 2-3 of the previous office action, dated 01 December 2005 and mailed 12 December 2005, have been withdrawn.
2. Applicant's arguments filed 13 March 2006 have been fully considered but they are not persuasive.

Regarding page 5, lines 7-14: While it is true that claims 14-16 are method claims, and not apparatus claims, the claim language nevertheless describes what the method is, rather than what the method actually does. In other words, rather than reciting positive steps of the method, claims 14-16 merely recite the purpose of the method and the resultant function of the method. The actual method itself is not claimed.

Regarding page 5, line 16 to page 8, line 13: While Examiner agrees with Applicant that the present amendments to the claims overcome the previous prior art rejections, additional prior art formerly made of record in said previous office action has been applied which anticipates and/or renders obvious the presently amended claims. The new grounds of rejection which have been necessitated by the present amendments to the claims are set forth in detail below.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.** The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 14 recites converting the target color to black when the subject color is in a range from a value representing the *lightest* color state to a predetermined value. This recitation does not find support in the specification. In the specification, the target color is converted to black when the subject color is in a range from a value representing the *deepest* color state to a predetermined value, but there is no disclosure related to any kind of inverse color matching, which would be required for the whole color space if the target color is to be black when the subject color is at the *lightest* color state. Thus, claim 14 does not comply with the written description requirement of 35 USC §112, 1st paragraph.

Since the amendment to claim 14 which results in this rejection is clearly an inadvertent error, claim 14 will be interpreted to mean the *deepest* color state to a predetermined value, rather than the *lightest* color state.

Art Unit: 2625

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Method claims 14-16 are indefinite since claims 14-16 describe what the method is, rather than what the method actually does. In other words, rather than reciting positive steps of the method, claims 14-16 merely recite the purpose of the method and the resultant function of the method. The actual method itself is not claimed. Therefore, claims 14-16 do not particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1-2, 5-7 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogatsu (US Patent 5,724,442).**

Regarding claim 1: Ogatsu discloses a printer (figure 1 of Ogatsu) having a scanning function for reading and printing an original (column 3, lines 1-6 and lines 14-19 of Ogatsu),

comprising color converting means (figure 1(2-4) of Ogatsu) for converting a first color component signal expressed in RGB based on the original thus read (column 3, lines 1-7 of Ogatsu) into a second color component signal expressed in CMYK used for printing (column 3, lines 10-16 of Ogatsu) by referring to a lookup table (DLUT) (column 3, lines 10-16 of Ogatsu), wherein said lookup table is formed so that the second color component signal represents black when each of the color signals constituting the first color component signal is in a range from a value indicating a deepest color state to a predetermined value (figure 3 and column 3, lines 38-46 of Ogatsu). Lightness compression is performed so that the lightness values of the first and second color spaces match (figure 3 and column 3, lines 38-46 of Ogatsu). The input and output colors are in RGB (column 3, lines 4-7 of Ogatsu) and CMYK (column 3, lines 10-16 of Ogatsu) color spaces, respectively. For the lightness values to match for the two color spaces, the blackest (and therefore deepest) value of the available RGB color space must match the blackest (and therefore deepest) value of the CMYK color space.

Regarding claim 2: Ogatsu discloses a printer (figure 1 of Ogatsu) having a scanning function for reading and printing an original (column 3, lines 1-6 and lines 14-19 of Ogatsu), comprising color converting means (figure 1(2-4) of Ogatsu) for converting a first color component signal expressed in RGB based on the original thus read (column 3, lines 1-7 of Ogatsu) into a second color component signal expressed in CMYK used for printing (column 3, lines 10-16 of Ogatsu) by referring to a lookup table (DLUT) (column 3, lines 10-16 of Ogatsu), wherein said lookup table is formed so that the second color component signal represents white when each of the color signals constitu-

ting the first color component signal is in a range from a value indicating a lightest color state to a predetermined value (figure 3 and column 3, lines 38-46 of Ogatsu). Lightness compression is performed so that the lightness values of the first and second color spaces match (figure 3 and column 3, lines 38-46 of Ogatsu). The input and output colors are in RGB (column 3, lines 4-7 of Ogatsu) and CMYK (column 3, lines 10-16 of Ogatsu) color spaces, respectively. For the lightness values to match for the two color spaces, the whitest (and therefore lightest) value of the available RGB color space must match the whitest (and therefore lightest) value of the CMYK color space.

Regarding claim 5: Ogatsu discloses that said lookup table has grids set to be non-equidistant, and in the vicinity of a portion where said first color component signal indicates the deepest color state, the distance between the grids is set to be large (column 3, lines 55-65 of Ogatsu). If the first color component signal is within the reproducible color range, the internal lattice points of the DLUT are used. If, on the other hand, the first color component signal is outside the reproducible color range, the first color component signal is compressed so that it is in the range that can be converted by the DLUT. Thus, the boundary grid points of the DLUT are non-equidistant compared with the other, more internal, grid points of the DLUT. Furthermore, since any point in the first color component signal that is deeper than the deepest color point available for the second color component signal is set to the deepest color point available for the second color component signal (figure 3 and column 3, lines 38-46 of Ogatsu), the distance between grid points at the deepest color state is set to be large since the distance between the deepest color states

of the two color component signals (as shown in the left side of figure 3 of Ogatsu) is much larger than at lightness values greater than the deepest color state but lesser than the lightest color state.

Regarding claim 6: Ogatsu discloses that said lookup table is expressed by grids (lattice points) including discontinuous values; and said grids are set to be non-equidistant, and a distance between said grids, in the vicinity of a portion where each of the color signals constituting the first color component signal indicates the deepest color state, is set to be large (column 3, lines 55-65 of Ogatsu). If the first color component signal is within the reproducible color range, the internal lattice points of the DLUT are used. If, on the other hand, the first color component signal is outside the reproducible color range, the first color component signal is compressed so that it is in the range that can be converted by the DLUT. Thus, the boundary grid points of the DLUT are non-equidistant compared with the other, more internal, grid points of the DLUT. Furthermore, since any point in the first color component signal that is deeper than the deepest color point available for the second color component signal is set to the deepest color point available for the second color component signal (figure 3 and column 3, lines 38-46 of Ogatsu), the distance between grid points at the deepest color state is set to be large since the distance between the deepest color states of the two color component signals (as shown in the left side of figure 3 of Ogatsu) is much larger than at lightness values greater than the deepest color state but lesser than the lightest color state.

Regarding claim 7: Ogatsu discloses that said lookup table is expressed by grids (lattice points) including discontinuous

Art Unit: 2625

values; and said grids are set to be non-equidistant, and a distance between said grids, in the vicinity of a portion where each of the color signals constituting the first color component signal indicates the lightest color state, is set to be large (column 3, lines 55-65 of Ogatsu). If the first color component signal is within the reproducible color range, the internal lattice points of the DLUT are used. If, on the other hand, the first color component signal is outside the reproducible color range, the first color component signal is compressed so that it is in the range that can be converted by the DLUT. Thus, the boundary grid points of the DLUT are non-equidistant compared with the other, more internal, grid points of the DLUT.

Furthermore, since any point in the first color component signal that is lighter than the lightest color point available for the second color component signal is set to the lightest color point available for the second color component signal (figure 3 and column 3, lines 38-46 of Ogatsu), the distance between grid points at the lightest color state is set to be large since the distance between the lightest color states of the two color component signals (as shown in the left side of figure 3 of Ogatsu) is much larger than at lightness values lesser than the lightest color state but greater than the deepest color state.

Regarding claim 14: Ogatsu discloses a color converting method (column 3, lines 1-6 and lines 14-19 of Ogatsu) for converting a subject color expressed in RGB (column 3, lines 1-7 of Ogatsu) for conversion into a target color expressed in CMYK (column 3, lines 10-16 of Ogatsu), wherein the color conversion is carried out so that the target color is converted to black when each of the color signals constituting the subject color for conversion is in a range from a value representing the

Art Unit: 2625

deepest color state to a predetermined value (figure 3 and column 3, lines 38-46 of Ogatsu). Lightness compression is performed so that the lightness values of the subject and target color spaces match (figure 3 and column 3, lines 38-46 of Ogatsu). The input and output colors are in RGB (column 3, lines 4-7 of Ogatsu) and CMYK (column 3, lines 10-16 of Ogatsu) color spaces, respectively. For the lightness values to match for the two color spaces, the blackest (and therefore deepest) value of the available RGB color space must match the blackest (and therefore deepest) value of the CMYK color space.

Regarding claim 15: Ogatsu discloses a color converting method (column 3, lines 1-6 and lines 14-19 of Ogatsu) for converting a subject color expressed in RGB (column 3, lines 1-7 of Ogatsu) for conversion into a target color expressed in CMYK comprising a combination of color signals (column 3, lines 10-16 of Ogatsu), wherein the color conversion is carried out so that the target color is converted to white when each of the color signals constituting the subject color for conversion is in a range from a value representing the lightest color state to a predetermined value (figure 3 and column 3, lines 38-46 of Ogatsu). Lightness compression is performed so that the lightness values of the first and second color spaces match (figure 3 and column 3, lines 38-46 of Ogatsu). The input and output colors are in RGB (column 3, lines 4-7 of Ogatsu) and CMYK (column 3, lines 10-16 of Ogatsu) color spaces, respectively. For the lightness values to match for the two color spaces, the whitest (and therefore lightest) value of the available RGB color space must match the whitest (and therefore lightest) value of the CMYK color space.

Art Unit: 2625

Regarding claim 16: Ogatsu discloses that the color conversion is carried out by referring to a lookup table (DLUT) predetermined with respect to correspondence between the color signal combination of the subject color and the color signal combination of the target color (column 3, lines 10-16 of Ogatsu).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogatsu (US Patent 5,724,442) in view of Oryo (US Patent 5,745,263).**

Ogatsu does not disclose expressly that said color converting means has a second lookup table different from said lookup table, and converts the first color component signal based on the read-out original to the second color component signal used for printing by selectively referring to any one of said lookup table and said second lookup table.

Oryo discloses that said color converting means has a second lookup table (figure 10(53 (portion)) and column 6, line 65 to column 7, line 4 of Oryo) different from a first lookup table (column 4, line 65 to column 5, line 5 of Oryo), and converts the first color component signal based on the read-out

Art Unit: 2625

original to the second color component signal used for printing by selectively referring to any one of said lookup table and said second lookup table (column 5, lines 1-9 of Oryo). Two separate lookup tables, which are used to convert an input color space to an output color space, are stored in RAM (figure 10(53) and column 6, line 65 to column 7, line 4 of Oryo). One lookup table is the start state lookup table that is used to directly convert the input color component signals to output color component signals if the input color component signals lie within the color expression range of the output color printer (column 4, line 65 to column 5, line 5 of Oryo). A second lookup table is the lookup table that is generated when the input color component signals lie outside of the color expression range of the output color printer (column 5, lines 1-9 of Oryo).

Ogatsu and Oryo are combinable because they are from the same field of endeavor, namely the conversion and processing of digital image color component data so that input and output colors perceptually match. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a separate lookup table for when the first color component signal is outside the color expression range of the second color component signal. The motivation for doing so would have been that a lookup table is easy and quick to access. Thus, using a lookup table, rather than computation, greatly increases the speed with which color conversion calculations are performed. Therefore, it would have been obvious to combine Oryo with Ogatsu to obtain the invention as specified in claim 8.

11. **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogatsu (US Patent 5,724,442) in view of Oryo (US Patent 5,745,263) and Lee (US Patent 5,012,333).**

Regarding claim 9: Ogatsu in view of Oryo does not disclose expressly that said color converting means selects any one of said lookup table and said second lookup table in accordance with a user's setting.

Lee discloses user selection of color conversion processing (figure 5 and column 9, lines 54-65 of Lee).

Ogatsu in view of Oryo is combinable with Lee because they are from the same field of endeavor, namely digital color image data processing and alteration. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform the selection of either the lookup table or second lookup table for color conversion, by way of user selection and setting, as taught by Lee. The motivation for doing so would have been to allow a user to interactively make desired adjustments to the resultant image (column 4, lines 43-49 of Lee). Therefore, it would have been obvious to combine Lee with Ogatsu in view of Oryo to obtain the invention as specified in claim 9.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this

Art Unit: 2625

action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson
Examiner
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22 May 2006



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